

**REMARKS**

At the time of the Office Action dated September 3, 2003, claims 2-12, 14-16 and 18-20 were pending and rejected in this application. Claims 19 and 20 have been cancelled.

**Claims 19 and 20 are rejected under the first paragraph of 35 U.S.C. § 112**

As claims 19 and 20 have been cancelled, the rejection of claims 19 and 20 is moot.

**Claim 16 is rejected under 35 U.S.C. § 102 for lack of novelty based upon Bertin,**

**U.S. Patent No. 5,909,400**

In the seventh enumerated paragraph of the Office Action, the Examiner asserted that Bertin discloses a semiconductor device corresponding to that claimed. This rejection is respectfully traversed.

In the statement of the rejection, the Examiner referred to Figs. 6-8, 13, and column 4, line 29 through column 5, line 40 to disclose this particular limitation. Applicants note, however, that the Examiner has failed to specifically point out what features disclosed by Bertin identically discloses the claimed limitations. 37 C.F.R. § 1.104(c) provides:

In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

Although argued with respect to claim 16, the following argument presented in the Amendment filed July 21, 2003, also applies to claim 14:

Notwithstanding what Figs. 6-8 and 12-13 disclose with regard to relative thickness, Applicants refer the Examiner to M.P.E.P. § 2125, which states "PROPORTION OF FEATURES IN A DRAWING ARE NOT EVIDENCE OF ACTUAL PROPORTIONS WHEN DRAWINGS ARE NOT TO SCALE" (capitalization in original). As Bertin fails to state that the drawings are to scale, "it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." In this regard, Bertin is completely silent as to the relative depths of any source/drain regions. Thus, Figs. 6-8 or 12-13 cannot be relied upon to disclose the relative depths of the first source/drain regions and the second source/drain regions recited in claim 14.

Notwithstanding these arguments, the Examiner has continued to rely on Figs. 6-8 or 13 to disclose the relative depths of the first source/drain regions and the second source/drain regions in the rejections of both independent claims 14 and 16, and this reliance constitutes clear error by the Examiner. Furthermore, the Examiner is referred to M.P.E.P. § 707.07(f), which states that "the Examiner, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it." Not only has the Examiner committed clear error, the Examiner has failed to follow the M.P.E.P. by not addressing, in the current Office Action, Applicants' prior arguments regarding this issue.

Furthermore, the Examiner's reliance on each of Figs. 7-13 to identically disclose the features recited in claim 14 is improper. As previously noted in the Amendment filed July 21, 2003, Figs. 6-8 and Figs. 12-13 are directed to two different types of methods (see column 4, line 32 through column 5, line 17 for Figs. 6-8 and column 6, line 27 through column 7, line 9 for Figs. 12 and 13) with only the second method being directed to a silicon on insulator device. Since these teachings are found in two different teachings, a rejection under 35 U.S.C. § 102 is not proper.

Upon further review of Bertin, Applicants note that several of the claimed elements recited in claim 16 are not disclosed by Bertin. Claim 16 initially recites "an insulating layer; a silicon layer over the insulating layer, the silicon layer including a first portion and a second portion; and providing a silicon layer over an insulating layer, the silicon layer including a first portion and a second portion." In the statement of the rejection the Examiner asserted that feature 122<sup>1</sup> of Bertin disclose the silicon layer and feature 139 discloses the insulating layer. The Examiner also asserted that the left side of Fig. 13 corresponds to the second portion and the right side corresponds to the first portion.

Claim 16 goes on to recite "a first transistor is formed in the first portion and a second transistor is formed in the second portion." The Examiner, however, did not clearly identify what features in Bertin disclose the claimed first transistor and the claimed second transistor. Since the first transistor is associated with the first portion (i.e., the right side of Fig. 13), Applicants can only assume that the Examiner intended to refer to the feature adjacent reference numeral 137 as disclosing the claimed first transistor because this feature is located on the right side of Fig. 13 and column 7, lines 4-5 states that the "Nmos read transistor is described by elements drain 135, source 136, and gate 137." Applicants note, however, that a second transistor, which would presumably be located in the left side of Fig. 13, is not disclosed in Bertin. In contrast to the right side of Fig. 13, which discloses a source, drain, and gate, comparable features are not disclosed in the left side of Fig. 13. Features 140 are described as

<sup>1</sup> The reference to feature 122 was made by the Examiner in the rejection of claim 14, which claims certain similar features to those features recited in claim 16.

"dummy" connotes a feature that is not operational for one or more reasons. In particular, Applicants note that there are no source/drain regions associated with the dummy CMOS gates 140 of Bertin. Thus, Bertin fails to identically disclose the claimed second transistor.

Claim 16 further recites that "a thickness of the second portion is greater than a thickness of the first portion." Although the Examiner referred to Figs. 6-8, 13 and column 4, line 29 through column 4, line 40, with the exception of Fig. 13, the Examiner's other citations do not apply to a silicon on insulator device. However, feature 121 is thicker than feature 122 in Fig. 12, which is consistent with column 6, lines 31-32 of Bertin.

Claim 16 also recites that "the first transistor includes first source/drain regions and the second transistor includes second source/drain regions." As previously noted, however, Bertin fails to identically disclose the claimed second transistor since there are no source/drain regions. Although features 130 and 131 are regions formed in the left side of Fig. 13, these are described in column 6, lines 64-65 as a bipolar emitter 130 and bipolar N-well base 131, and therefore, not comparable to source/drain regions. Thus, Bertin fails to identically disclose the claimed second source drain regions.

Claim 16 recites "a depth of the second source/drain regions greater than a depth of the first source/drain regions." As previously discussed, Bertin fails to identically disclose the claimed second source drain regions. Thus, Bertin cannot teach that these non-existent second

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be considered one of the claimed second source region or second drain region and feature 134 could be considered the other, feature 130 does not appear to have a depth greater than the first source/drain regions 136, 135, as required by the claim. Applicants, therefore, respectfully submit that Bertin fails to identically disclose the claimed invention, as recited in claim 16, and thus, Applicants solicit the withdrawal of the imposed rejection of claim 16 under 35 U.S.C. § 102 for lack of novelty based upon Bertin.

**Claims 2-12, 14-15 and presumably 18 are rejected under 35 U.S.C. § 103 for obviousness based upon Bertin "in view of the [Examiner's] remarks"**

In the eighth enumerated paragraph of the Office Action, the Examiner asserted that Bertin discloses the claimed invention or that the claimed invention would have been obvious in view of Bertin. This rejection is respectfully traversed.

Independent 14 includes the limitations in independent claim 16 that Applicants have argued in response to the prior rejection are not identically disclosed by Bertin in contrast to the Examiner's assertions to the contrary, and Applicants incorporate herein those arguments as also applying to independent claim 14.

With regard to independent claim 14, the Examiner cited M.P.E.P. § 806.05(f) and stated the following:

Though Bertin partially grows the second portion of the layer 122 to form a thick portion (122-124) and a thin portion (122-125) on a substrate 120, 122 is formed of the same material as the first portion

...even though the thickness of the second portion is partially removed from the first layer, since such a modification would have involved a mere change in the method of forming the device, and it would involve only routine skill in the art. (Note further that if the method of

manufacturing the semiconductor device comprising (in addition with other limitations) forming a silicon layer having a thin portion and a thick portion as claimed in this pending application could not be obviously modified from that of Bertin, then it is clearly that the method of Bertin is a distinct method which is used to manufacture the same device, or that the device as claimed in this pending application can be made by another and materially different process.

Initially, Applicants note that the Examiner's citation to M.P.E.P. § 806.05(f) is inappropriate since section 800 of the M.P.E.P. involves double patenting rejections, which is not involved in this case. With regard to the Examiner's arguments regarding two methods "used to manufacture the same device," Applicants refer the Examiner to the recently decided case of TorPharm, Inc. v. Ranbaxy Pharm., Inc.,<sup>2</sup> in which the Federal Circuit stated "there are no per se rules relating the patentability of product and process in either direction ... [a] process yielding a novel and nonobvious product may nonetheless be obvious; conversely, a process yielding a well-known product may yet be nonobvious" (emphasis added). Notwithstanding that Applicants have already established that Bertin fails to disclose the claimed structure recited in claim 16, whose limitations are also found in claim 14, *even if* the claimed method and the method of Bertin produced the identical structure, such a fact is not dispositive on the patentability of the claimed method.

From the statement that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Bertin ... since such a modification would have involved a mere change in the method of forming the device," it appears that the Examiner is arguing that changes in a method of forming a device are not patentable, which is in direct contravention to well-established law that a process of making a

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<sup>2</sup> Case No. 02-1590 (Fed. Cir. July 23, 2003).

device can be nonobvious, *even if* the device being made is identical. Furthermore, the Examiner has failed to establish a motivation to modify Bertin to arrive at the claimed invention.

The requisite motivation to support a rejection of obviousness under 35 U.S.C. § 103 is not an abstract concept, but must stem from the applied prior art as a whole and have realistically impelled one having ordinary skill in the art to modify a specific reference to arrive at a specifically claimed invention.<sup>3</sup> Furthermore, the Examiner is burdened to identify a source in the applied prior art for the requisite realistic motivation to modify a particular reference in a particular manner to arrive at a specifically claimed invention.<sup>4</sup> This burden, however, has not been met since the Examiner has failed to explain why one having ordinary skill in the art would modify Bertin in the manner suggested by the Examiner.

With regard to claims 3-10, the Examiner stated the following:

Regarding claim 3-10, Bertin discloses all the claimed limitations. Note that these limitations are very well known in the art. (See US Patent Application Publication No. 2001/0045561 by Hata et al., for example). See also column 6, line 23 to column 7, line 9 of Bertin.

In responding to a nearly identical statement, Applicants have already argued the following, which also applies to the Examiner's present statement:

This statement is completely inconsistent with the Examiner's prior statement that "Bertin partially grows the second portion of the layer 122 to form a thick portion (122 + 121) and a thinner portion (122) (figures 12,13) instead of first forming a thick layer and then partially removing a portion of the thick layer to form a thick portion and a thinner portion," as reproduced above. Claims 3-7 are directed to the step of partially removing the first portion of the silicon layer, which, by the Examiner's own words, is admittedly not disclosed by Bertin. As such, how could the limitations recited in claims 3-7 be disclosed by Bertin?

<sup>3</sup> *Ex. 1*, 1989).

<sup>4</sup> *Smiths Industries Medical System v. Vital Signs Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999). *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997).

The only difference between the Examiner's prior statement and current statement is that the Examiner has added the reference to Hata et al. Notwithstanding whether or not Hata et al. discloses that the features recited in claims 3-10 are conventional, the Examiner is still required to establish a motivation to modify Bertin so as to arrive at the claimed invention. This motivation cannot be dispensed with even if the missing limitations are well known. As a general matter, "virtually all [inventions] are combinations of old elements."<sup>5</sup> As such, the law requires a motivation be established that would lead one having ordinary skill in the art to modify a reference or combine references so as to arrive at the claimed invention. Otherwise, without such a requirement to establish a motivation, nearly all claimed inventions would be deemed obvious since most invention are combinations of old elements. The Examiner, however, has failed to establish any motivation to modify Bertin so as to arrive at the claimed invention, as recited in claims 3-10.

With regard to claims 11 and 12, the Examiner stated the following:

Regarding claims 11 and 12, Bertin discloses all the claimed limitations. Note that it is obvious to one of ordinary skill in the art that isolating features 123 could be formed either before or after the first portion of the silicon layer being partially removed, since it is obvious that any of such order of forming the isolating features would not make any change in the spirit and scope of the invention of Bertin.

In responding to an identical statement, Applicants have already argued the following, which also applies to the Examiner's present statement:

The Examiner's statement that "it is obvious that any of such order of forming the isolating features would not make any change in the spirit and scope of the invention of Bertin" ignores whether or not the claimed invention is obvious. The "spirit and scope of the invention of Bertin" has no bearing on the obviousness of the claimed invention. Applicants also note that claims 11 and 12 are directed to the timing of the partial removal of the first portion, which the Examiner

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In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) (quoting Environmental Designs, Ltd. v. Union Oil, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1993)).



without any factual or legal basis, that it is obvious, in view of Bertin, to modify a feature that Bertin fails to teach.

The Examiner is again referred to M.P.E.P. § 707.07(f), which states that "the Examiner, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it."

The Examiner is not free to ignore Applicants' arguments. If the Examiner disagrees with Applicants' arguments, the Examiner should put forth a reason why. As stated in M.P.E.P. § 706.07, "[b]efore final rejection is in order a clear issue should be developed between the examiner and applicant." If the Examiner does not respond to Applicants' arguments, how can a clear issue be developed?

With regard to claims 15 and 18, the Examiner stated the following:

Regarding claims 15 and 18, Bertin discloses the semiconductor device comprising all claimed limitations, except for the diffusivity of the second dopant into silicon is greater than the diffusivity of the first dopant into silicon. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the diffusivity of the second dopant into silicon could be greater than, less than, or equal to the diffusivity of the first dopant into silicon since applicant has not disclosed that such diffusivity of the second dopant into silicon being greater than that of the first dopant into silicon solves any stated problem or is for any particular purpose, and it appears that the invention would perform equally well with the diffusivity of first dopant and the second dopant being either the same or different.

The Examiner appears to be confused about the purpose of claims and the limitations contained therein. Limitations in a claim are not required to be described as being critical, as providing unexpected results, as solving a particular problem, or as providing a specific function. Instead, claims, and the limitations contained therein, are used to "particularly point out and distinctly claim the subject matter which the applicant regards as his invention."<sup>6</sup> The Examiner is not free to assume a limitation/claim is obvious based solely on the Examiner's

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<sup>6</sup> 35 U.S.C. § 112, 2nd ¶.

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belief that the limitation/claim does not "solve any stated problem or is for any particular purpose." Furthermore, whether or not "the invention would perform equally well," depending upon whether a feature recited in a claim is present or not, is not dispositive on the patentability of the claim.

As the Examiner has not provided a proper motivation for one having ordinary skill in the art to modify Bertin to arrive at the claimed invention, Applicants respectfully submit that the Examiner has failed to establish a prima facie basis for the imposed rejection under 35 U.S.C. § 103 for obviousness. Applicants, therefore, solicit withdrawal of the imposed rejection of claims 2-12, 14-15 and 18 under 35 U.S.C. § 103 based upon Bertin in view of the Examiner's comments.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

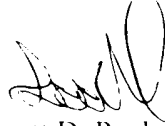
To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper.

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including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Scott D. Paul", is written over the firm name.

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